



# OIL ANALYSIS REPORT

WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>



Area  
**TMR-Sunshine**  
Machine Id  
**21584 LIEBHERR R934 925-14645**  
Component  
**Diesel Engine**  
Fluid  
**DIESEL ENGINE OIL SAE 15W40 (--- GAL)**

## RECOMMENDATION

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>DJJ0021123</b>	DJJ0021131	DJJ0007475
Sample Date		Client Info		<b>06 Feb 2024</b>	17 Oct 2023	22 Jun 2022
Machine Age	hrs	Client Info		<b>28499</b>	27965	0
Oil Age	hrs	Client Info		<b>0</b>	500	0
Filter Age	hrs	Client Info		<b>0</b>	500	0
Oil Changed		Client Info		<b>Changed</b>	Changed	N/A
Filter Changed		Client Info		<b>N/A</b>	Changed	N/A
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>5</b>	4	3
Chromium	ppm	ASTM D5185m	>5	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>5	<b>0</b>	<1	1
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	0	<1
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185m	>15	<b>1</b>	1	2
Lead	ppm	ASTM D5185m	>30	<b>0</b>	2	<1
Copper	ppm	ASTM D5185m	>125	<b>3</b>	2	2
Tin	ppm	ASTM D5185m	>5	<b>0</b>	<1	1
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

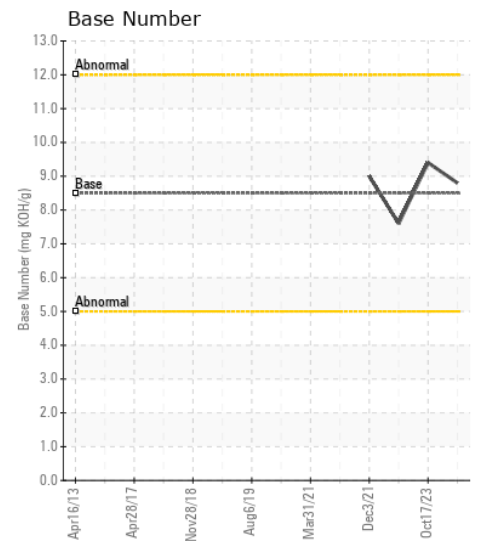
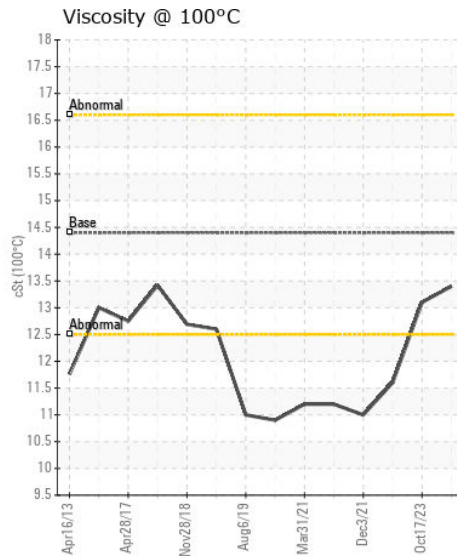
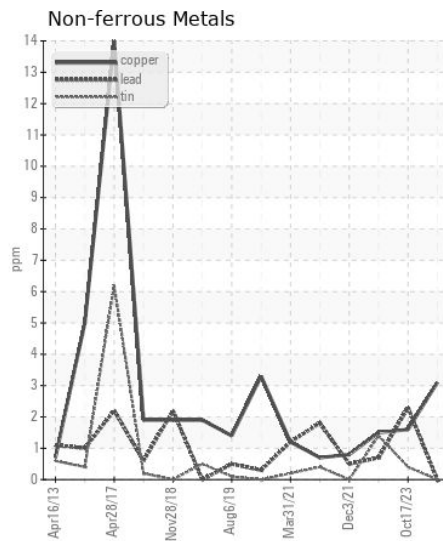
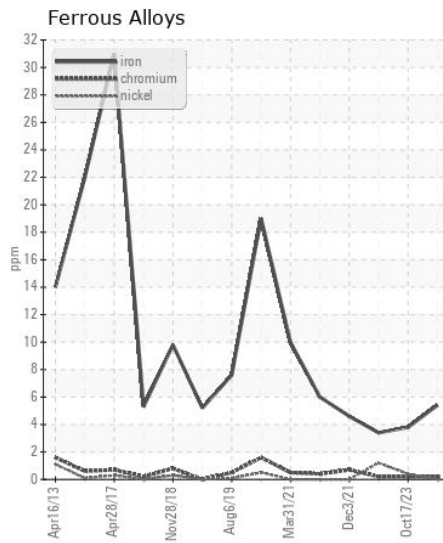
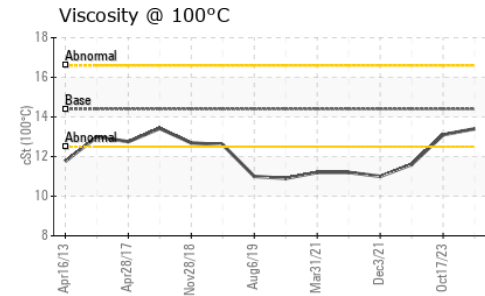
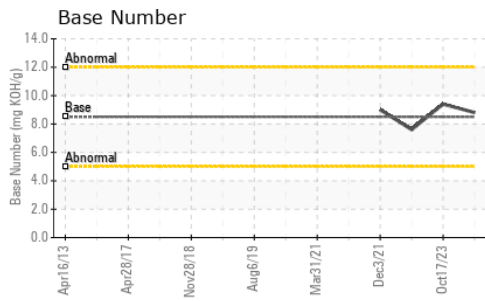
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>60	<b>2</b>	6	6
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	2	2
Fuel		WC Method	>5	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.1</b>	0.4	0.2
Nitration	Abs/cm	*ASTM D7624	>20	<b>5.3</b>	6.2	6.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>17.6</b>	18.1	17.3
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	NEG

## FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>158	<b>0</b>	4	2
Boron	ppm	ASTM D5185m	250	<b>9</b>	14	98
Barium	ppm	ASTM D5185m	10	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	100	<b>53</b>	45	11
Manganese	ppm	ASTM D5185m		<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185m	450	<b>862</b>	814	540
Calcium	ppm	ASTM D5185m	3000	<b>1007</b>	1019	1053
Phosphorus	ppm	ASTM D5185m	1150	<b>965</b>	946	643
Zinc	ppm	ASTM D5185m	1350	<b>1087</b>	1068	650
Sulfur	ppm	ASTM D5185m	4250	<b>4224</b>	2691	4205
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>12.7</b>	13.4	10.4
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>8.8</b>	9.4	7.6
Visc @ 100°C	cSt	ASTM D445	14.4	<b>13.4</b>	13.1	11.6



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : DJJ0021123 **Received** : 13 Feb 2024  
**Lab Number** : 06087072 **Tested** : 14 Feb 2024  
**Unique Number** : 10874517 **Diagnosed** : 14 Feb 2024 - Wes Davis  
**Test Package** : CONST ( Additional Tests: TBN )

**TRADEMARK METALS RECYCLING - SUNSHINE**  
 13200 CAIRO LN  
 OPA LOCKA, FL  
 US 33054  
 Contact: Service Manager

To discuss this sample report, contact Customer Service at 1-800-237-1369.

\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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F: